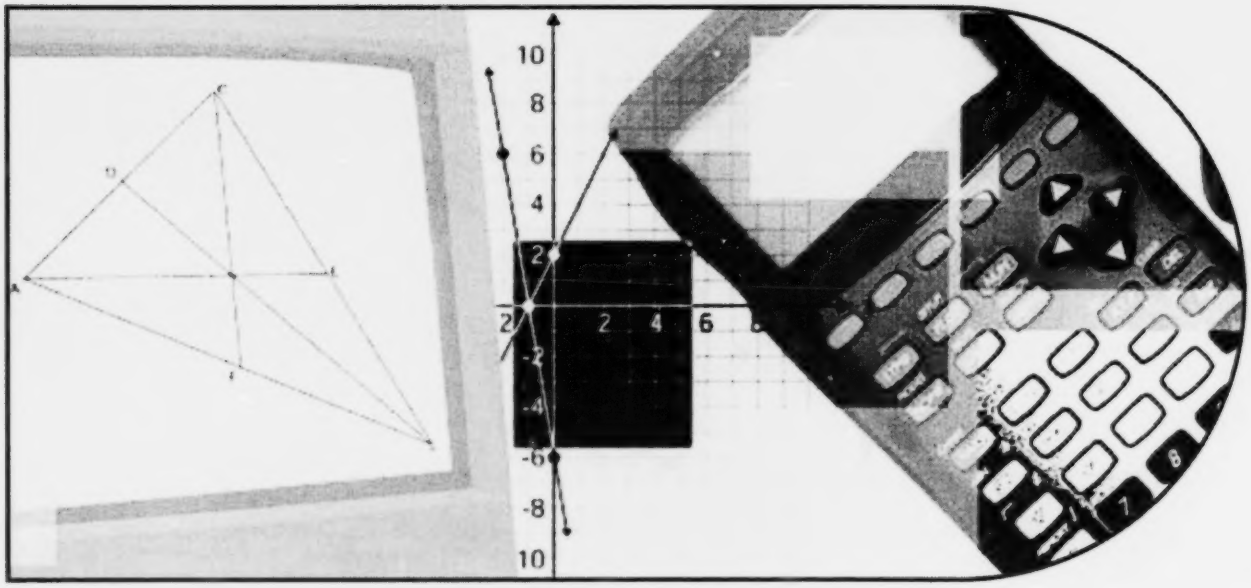

Steps and Teacher's Scripts

The Grade 9 Assessment of Mathematics, Winter 2003

EQAO
Education Quality and Accountability Office

Steps and Teacher's Scripts

The Grade 9 Assessment of Mathematics,
Winter 2003

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The New Guide

We hope you find the new guide easy to follow. It has been redesigned in response to comments from teachers and principals.

This document contains

- ❑ an overview of the steps to follow, showing who is responsible — teacher and/or principal — for each
- ❑ the steps in detail, with a checklist for keeping track of your progress
- ❑ the scripts for teachers to use

Changes for 2002–2003

- ❑ The scripts now include time prompts.
- ❑ A policy, Special Cases, for temporary accommodations has been added.

Booklet 4:

- Versions with a graphing calculator on the cover require students to use one.
- Not all schools will receive *Booklet 4*. Schools not receiving *Booklet 4* will follow a two- or four-day plan.

The CD

- ❑ Use the CD for training and as a source of additional information. It contains
  - all the information in this guide
  - the policies that govern the administration
  - appendices (letters to parents, formula sheets, etc.)

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Overview

STEP 1	Receive shipment 1.	Principal
STEP 2	Read and distribute *Steps and Teacher's Scripts.*	Principal, Teacher
STEP 3	Train to administer.	Principal, Teacher
STEP 4	Identify students with IEPs who require accommodations and special provisions.	Principal, Teacher
STEP 5	Identify students requiring exemptions.	Principal
STEP 6	Complete Class Tracking Sheets (CTSs) and Student Information Forms (SIFs).	Principal, Teacher
STEP 7	Store completed CTSs and SIFs in secure location.	Principal
STEP 8	Determine administration schedule.	Principal
STEP 9	Receive shipment 2.	Principal
STEP 10	Keep materials confidential and secure.	Principal, Teacher
STEP 11	Review *Steps and Teacher's Scripts.*	Teacher
STEP 12	Complete Teacher Questionnaire.	Teacher

LEGEND: Principal Teacher

STEP 13	Determine class organization.	Teacher
STEP 14	Determine in-school marking policy.	Principal, Teacher
STEP 15	Distribute CTSs and SIFs to teachers.	Principal
STEP 16	Distribute assessment materials to teachers; check materials received.	Principal, Teacher
STEP 17	Distribute assessment packages to students.	Teacher
STEP 18	Orient students and complete Student Questionnaire.	Teacher
STEP 19	Label and collect envelopes.	Teacher
STEP 20	Distribute envelopes containing assessment materials.	Teacher
STEP 21	Administer assessment.	Principal, Teacher
STEP 22	Mark previously identified components.	Teacher
STEP 23	Return all assessment materials to principal.	Teacher
STEP 24	Photocopy CTSs and SIFs.	Principal
STEP 25	Prepare to return all assessment materials to EQAO.	Principal
STEP 26	Call UPS and keep record of shipment tracking number.	Principal

LEGEND: Principal Teacher

Steps in Detail

			Responsibility Checklist	
STEP 1	Receive shipment 1.	• Shipment 1 arrives by courier December 2–6, 2002. • Verify contents: – Class Tracking Sheets (CTSs), Student Information Forms (SIFs) – Training to Administer CD – *Steps and Teacher's Scripts* • Call EQAO if materials are missing (1-888-327-7377).		
STEP 2	Read and distribute *Steps and Teacher's Scripts.*	• Distribute *Steps and Teacher's Scripts* to teachers and support staff. • Read *Steps and Teacher's Scripts.*		
STEP 3	Train to administer.	• Arrange individual or group sessions to review Training to Administer CD at least one week before administration. • Complete training.		
STEP 4	Identify students with IEPs who require accommodations and special provisions.	• Review requirements for accommodations and special provisions on Training to Administer CD or on EQAO's Web site (www.eqao.com). • Communicate with parents of students who will be accommodated or receive special provisions. • Arrange necessary support for students.		
STEP 5	Identify students requiring exemptions.	• Review requirements for exemption on Training to Administer CD or EQAO's Web site (www.eqao.com). • Identify students for whom exemptions will be recommended. • Send letters regarding exemptions to parents and file signed letters.		

LEGEND: Principal Teacher

			Responsibility Checklist	
STEP 6	Complete Class Tracking Sheets (CTSs) and Student Information Forms (SIFs).	• Ensure forms are completed. The order of student barcoded ID numbers on the CTS matches the order in which the SIFs are delivered. **Class Tracking Sheet** The CTS is the official record EQAO uses to produce student reports. For classes with students in both applied and academic programs, a separate CTS is provided for each program. • Use class list to account for every student registered in class. • Neatly print each student's name beside a student barcoded ID number. (Name stickers printed in 10-point font or larger may be used.) • Record all students, even those who will be exempted. **Student Information Form** Complete one SIF for each student enrolled in the class and recorded on the CTS. • Ensure last four, bold digits of preprinted student barcoded ID number match last four, bold digits of student barcoded ID number on CTS. • Use dark pen or pencil to complete form. • Enter information in appropriate sections of form prior to assessment.		
STEP 7	Store completed CTSs and SIFs in secure location.	• Keep materials locked away securely at all times when not in use for administration.		

LEGEND: Principal Teacher

			Responsibility Checklist	
STEP 8	Determine administration schedule.	• Plan administration schedule. • Schools completing *Booklet 4* will follow a three- or five-day schedule. All others will follow a two- or four-day schedule. **Two- or Three-Day Schedule** **Day One** *Booklet 1* (Multiple-Choice) 30 min *Booklet 2* Part I (Tasks) 40 min **Day Two** *Booklet 3* (Short Answer) 30 min *Booklet 2* Part II (Tasks) 40 min **Day Three** *Booklet 4* 30 min **Four- or Five-Day Schedule** **Day One** *Booklet 1* (Multiple-Choice) 30 min **Day Two** *Booklet 2* Part I (Tasks) 40 min **Day Three** *Booklet 3* (Short Answer) 30 min **Day Four** *Booklet 2* Part II (Tasks) 40 min **Day Five** *Booklet 4* 30 min Times indicate student time on-task. Additional time will be required to distribute materials and provide instruction.		
STEP 9	Receive shipment 2.	• Shipment 2 will arrive by January 7, 2003, and will contain all student assessment materials. • Ensure that secretary and custodian are alerted to watch for arrival of these materials.		

LEGEND: Principal Teacher

			Responsibility Checklist	
STEP 9 Cont'd	Receive shipment 2.	• All assessment materials are itemized on Packing/Return List. Check contents of tote box(es) on arrival. • Log all materials received on Packing/Return List, including quantity of each item. • If you receive a partial shipment, wait two days after receiving first tote box(es) for full shipment to arrive. • If all materials have not arrived after two days, call EQAO (1-888-327-7377). • Store tote box(es) and packing materials for return of assessment materials to EQAO.		
STEP 10	Keep materials confidential and secure.	• Keep materials strictly confidential; do not photocopy or discuss them. • Students and teachers not involved in administration of assessment must not have any contact with materials. • If a security breach occurs or is suspected, notify EQAO immediately (1-888-327-7377).		
STEP 11	Read *Steps and Teacher's Scripts.*	• Review *Steps and Teacher's Scripts* prior to administration of assessment. They are required procedures that ensure consistency in administration of each assessment component.		
STEP 12	Complete Teacher Questionnaire.	• Complete questionnaire according to instructions provided. • If you are teaching both applied and academic classes, complete **one** questionnaire — for program that has **larger** number of students. • Use dark pen or pencil. • Return completed questionnaire to principal. (Use sealed envelope labelled "Teacher Questionnaire" if you wish confidentiality.)		

LEGEND: Principal Teacher

			Responsibility Checklist	
STEP 13	Determine class organization.	• Arrange for appropriate room and seating to ensure that students work independently. • Remove any mathematics material that is directly instructional in nature (e.g., definitions of mathematical terms). • Review Key Words and Phrases in Instructions sheet and Formulas sheet. (You may wish to post these.)		
STEP 14	Determine in-school marking policy.	• Identify component(s) of the assessment to be marked for classroom assessment purposes. Since versions of *Booklet 4* vary, do not choose it for marking. All components of *Booklets 1, 2* and *3* may be used; however, the booklets may not be photocopied for marking or any other purpose. No pen or pencil marks may be made in the booklets other than those of the student. **Note:** When marking components for classroom evaluation, use the package of materials marked "TEACHER" on the CTS.		
STEP 15	Distribute CTSs and SIFs to teachers.	• Before distributing forms to teachers, review all classes' forms to ensure they are complete and that last four digits of each student's CTS barcode match last four digits of student's SIF barcode.		
STEP 16	Distribute assessment materials to teachers; check materials received.	• Ensure you have received correct materials for your class(es). **Note:** The assessments are different for students in applied and academic programs. • Ensure that a scientific calculator or a graphing calculator is available for each student in your class(es). **Note:** Not all students completing *Booklet 4* will require a graphing calculator. • Review completed CTS to ensure all students are listed.		

LEGEND: Principal Teacher

			Responsibility Checklist	
STEP 16 Cont'd	Distribute assessment materials to teachers; check materials received.	• Do not open individual student packages. **Note:** A teacher's package of assessment materials is provided. This is the first package listed on the CTS.		
STEP 17	Distribute assessment packages to students.	• Use CTS to distribute student packages. • Ensure that last four digits of student barcoded ID on CTS and student package match. • Check that each sealed student package contains the following materials: – Student Questionnaire – Formula Sheet – Student Answer Sheet — *Booklet 1* – Student Answer Sheet — *Booklet 4** – *Booklet 1* (Multiple-Choice) – *Booklet 2* (Tasks) – *Booklet 3* (Short Answer) – *Booklet 4*** (content of *Booklet 4* varies) – Envelope		
		* Only for students receiving *Booklet 4* with multiple-choice. ** Only some schools will receive *Booklet 4*.		
		If student's package is incomplete, • replace incomplete package with one of the extra packages; • make appropriate changes on CTS; • complete new SIF with new barcoded ID number; • check "VOID" on original SIF (circle at top right corner) and • check "Changes Made" on CTS to indicate a change has been made. Extra packages must not be opened and must be returned to EQAO at the conclusion of the assessment.		

LEGEND: Principal Teacher

			Responsibility Checklist	
STEP 18	Orient students and complete Student Questionnaire.	**Orientation** The student orientation will take approximately 30 min. • Use script included in Teacher's Scripts. • Administration of actual assessment will take approximately 170 min. Ideally, it will be administered over consecutive mathematics periods. • Students will work independently on all components. Inform students of required materials (scientific calculators, pens, pencils, erasers, rulers and paper for rough work in multiple-choice section). **Student Questionnaire** • Read instructions in Teacher's Scripts. Emphasize correct way to fill in circles. • If required, read questions to students, allowing time to fill in circles. • Collect completed Student Questionnaires. • Place questionnaires in secure location.		
STEP 19	Label and collect envelopes.	• Have students label their envelopes and enclose all remaining assessment materials in envelope. • Collect envelopes and store in secure location.		
STEP 20	Distribute envelopes containing assessment materials.	• Hand out envelopes containing assessment materials according to the names previously written on them.		

LEGEND: Principal Teacher

			Responsibility Checklist	
STEP 21	Administer assessment.	Oversee administration of assessment. Administer assessment. • Read appropriate sections of Teacher's Scripts to students. • Mark attendance on CTS. • Never leave room unattended once materials have been distributed. If emergency occurs, instruct students to leave materials on their desks and to exit immediately. When they return, instruct them to return to work. • Remind students to plan their time so that they can complete each component of assessment. • Do not translate or explain terms or questions for students. • Do not influence students' responses. • Do not correct students' work. • As students work through assessment, – encourage them to attempt all items; – ensure that graphing calculators are available for students working in versions of *Booklet 4* that have graphing calculator icon on cover and – ensure that materials and activities are available for those who complete a task before time is up. • Collect **each booklet** as it is completed. • Ensure that Student Answer Sheets are collected and kept separate from booklets. Answer sheets placed in booklets may result in students' not receiving marks. • At end of each day's assessment period, collect envelopes. • Put envelopes, completed booklets and Student Answer Sheets in secure place.		

LEGEND: Principal Teacher

			Responsibility Checklist	
STEP 22	Mark previously identified components.	• No comments or marks may be made on booklets. • Do not photocopy students' work.		
STEP 23	Return all assessment materials to principal.	• Bundle all unused student packages together. • Ensure that a SIF is completed for every student listed on CTS. • Ensure attendance section for each student is completed on CTS. • Put original SIFs and original CTSs in an envelope. • Bundle all Student Questionnaires together. • Bundle all completed *Booklet 1's* together and secure with elastic. • Follow same procedure for *Booklets 2, 3* and *4*. • Bundle all Student Answer Sheets together and secure with elastic. • Bundle all materials and booklets used for in-school marking of students' work. • Include completed Teacher Questionnaire (in envelope for confidentiality, if desired). • Include unused student packages.		
STEP 24	Photocopy CTSs and SIFs.	• Photocopy CTSs. • Photocopy all SIFs (recommended). • Store copies in office. • Place originals with materials to be returned to EQAO.		

LEGEND: Principal Teacher

			Responsibility Checklist	
STEP 25	Prepare to return all assessment materials to EQAO.	• Indicate on Packing/Return List total quantity of each item being returned. Quantity of materials returned must equal quantity sent to school. • Photocopy completed Packing/Return List and keep copy in secure place. • Include original Packing/Return List with materials being returned. • Place all assessment materials, Student Questionnaires, Teacher Questionnaires, CTSs and SIFs in tote box(es) provided. Fill free space in box(es) with original packing material. Seal all materials as indicated on Packing/Return List. • Affix prepaid shipping label(s) to tote box(es). • Keep following on file in school: – photocopy of CTS for each class participating in assessment; – photocopies of all SIFs (recommended); – signed consent forms for any students exempted from assessment and – photocopy of completed Packing/Return List.		
STEP 26	Call UPS and keep record of shipment tracking number.	• Seal tote box(es). • Call United Parcel Service (UPS) at 1-800-742-5877 for pickup. • Record date of courier pickup. • Keep copy of UPS waybill and tracking number.		

LEGEND: Principal Teacher

Teacher's Scripts

Before the Assessment (1 or 2 days prior)

Read the following to your class at least one day before the assessment. This leaves time to give general information about the assessment and to have students complete the Student Questionnaire.

- ❑ The Grade 9 Assessment of Mathematics will take place during your math classes on _____, 2003.
- ❑ (*Optional:* Some components will be used for your class mark.)
- ❑ All components will be marked and results will be reported to you and your parents.
- ❑ It is important that you do your best on the assessment.
- ❑ You will need to bring some supplies to class on the days of the assessment. These supplies include
  - ❍ sharpened pencils and/or pens;
  - ❍ an eraser;
  - ❍ a scientific calculator or, if you have one, a graphing calculator (you must have at least a scientific calculator) and
  - ❍ a ruler.
- ❑ Bring a book with you to class to read on the days of the assessment in case you finish before the specified time.

Student Introduction to the Assessment

Distribute the packages to the students. Ensure that the Student Barcoded ID Numbers on the packages match the numbers assigned to the students on the Class Tracking Sheet.

- ❑ Open your packages.
- ❑ In your package, you should have the following items:
  - ❍ a Student Questionnaire;
  - ❍ a Student Answer Sheet — *Booklet 1;*
  - ❍ a Formulas sheet;
  - ❍ *Booklet 1;*
  - ❍ *Booklet 2;*
  - ❍ *Booklet 3;*
  - ❍ *Booklet 4** and
  - ❍ an envelope.

*Only some schools will receive *Booklet 4*.

*(**Note:** Some students will have a* Booklet 4 *that contains multiple-choice questions. Only these students will receive a multiple-choice answer sheet for* Booklet 4. *The last four digits of the barcode on each student's answer sheet should match the last four barcoded digits on his or her* Booklet 4.*)*

- ❑ Check to ensure that the last four barcoded digits are the same on each booklet.

  Let me know if you are missing any items.

(If a student is missing an item, give the student a completely new package and make the appropriate changes on the Student Information Form and on the Class Tracking Sheet.)

- ❑ ***For schools that have received* Booklet 4:** Look at the cover of *Booklet 4*. Raise your hand if there is a graphing calculator icon on the cover. *(Note the names of these students. These students will require a graphing calculator for* Booklet 4.*)*

- ❑ Find your copy of the Student Questionnaire. This is the only document we will be working on today.

- ❑ Put the remaining material in the envelope and write your name on the outside of the envelope.

Read the introduction and directions to the students:

- ❑ We would like to know a little about your background so that we can see how students with different experiences do on this mathematics assessment. Do not sign or put your name on this questionnaire. Your responses will remain completely confidential. We will only report results for categories of students: for example, female and male. Please read each question carefully. You may ask for help to complete this questionnaire. This questionnaire will take 10 to 15 min to complete. If no answer seems exactly right, fill in the box for the one that is closest to what you want to say. Please use a dark pen or pencil.

- ❑ Do not use check marks or Xs. Thank you.

Assist the students in completing the questionnaire. Collect the questionnaires when students have completed them.

Collect the envelopes and store them in a secure location.

Part I: The First Assessment Period

Distribute the student envelopes.

- ❑ Today we are starting the first part of the Grade 9 Assessment of Mathematics. It is important that you do your best work. Since this is an assessment, I cannot help you understand the questions.
- ❑ You can use your scientific calculator for all parts. If you have a graphing calculator, you may use it.

Booklet 1 (Multiple-Choice Questions) (30 min)

- ❑ Turn to *Booklet 1* and the Student Answer Sheet.
- ❑ Today you will be working on multiple-choice questions.

Ask students to open their booklets to the first page and to follow along as you read aloud the Directions to Students about Answering Multiple-Choice Questions.

- ❑ Mark all answers on the Student Answer Sheet.
- ❑ Use a dark pen or pencil when answering questions.
- ❑ Use your scientific calculator or your graphing calculator if you have one.
- ❑ You may use the Formulas sheet to assist you.
- ❑ You will have 30 min to complete the questions. I will tell you when 15 min have passed.
- ❑ When you see the stop sign, you have completed the multiple-choice section. Check your answers, then wait quietly for directions.

After 15 min

- ❑ You have 15 min left.

After 30 min

- ❑ Stop working. Close your booklet.

Collect the Student Answer Sheets and Booklet 1's *separately.*

(If you are stopping for the day, ask students to place all other materials in their envelopes. Collect the envelopes and store them in a secure location.)

Part II

Distribute the student envelopes, if necessary.

Booklet 2 (Tasks — Part I) (40 min)

- ❑ Take out *Booklet 2.*
- ❑ You will now be working on extended-response tasks 1, 2 and 3.

(Read Directions to Students about Answering Tasks aloud.)

- ❑ Show all of your work and include words, numbers, graphs, diagrams, symbols, charts and/or pictures to explain your thinking.

- ❑ Use the Key Words and Phrases in Instructions sheet in the front of your booklet as a guide.

(Read or review the Key Words and Phrases in Instructions sheet aloud to your students.)

- ❑ You may use the Formulas sheet to assist you.
- ❑ You will have 40 min to complete these three tasks. Make sure you plan your time carefully. The first two tasks are 15-min tasks and the last one is a 10-min task.
- ❑ When using your scientific calculator or your graphing calculator, write down the numbers and the operations.
- ❑ Do not work past the stop sign.

After 15 min

- ❑ Fifteen min have passed.

After 30 min

- ❑ You have 10 min left.

After 40 min

- ❑ Stop working.
- ❑ Close your booklet and place it in your envelope.
- ❑ Make sure all assessment materials are in your envelope.

Collect the envelopes and store in a secure location.

Part III

Distribute student envelopes.

Booklet 3 (Short Answer Items) (30 min)

- ❑ Today we will begin working on the short answer items that are located in *Booklet 3*.
- ❑ Take out *Booklet 3*.
- ❑ These items require you to think but they do not require a long answer.
- ❑ You may use your scientific calculator or your graphing calculator.

(Read Directions to Students about Answering Short Answer Items aloud.)

- ❑ You will have 30 min to complete the items. I will tell you when 15 min have passed.
- ❑ Refer to the Key Words and Phrases in Instructions sheet and the Formulas sheet to assist you.
- ❑ Open your booklet and begin to work.

After 15 min

- ❑ You have 15 min left.

After 30 min

- ❑ Stop working. Close your booklet.

Collect the booklets.

(If you are stopping for the day, ask students to place all materials in their envelopes. Collect the envelopes and store in a secure location.)

Part IV

Distribute the student envelopes, if necessary.

Booklet 2 (Tasks — Part II) (40 min)

- ❑ Please take out *Booklet 2*.
- ❑ You will now work on extended-response tasks 4, 5 and 6.

(Review the Directions to Students about Answering Tasks with the students.)

- ❑ Show all of your work and include words, numbers, graphs, diagrams, symbols, charts and/or pictures to explain your thinking.
- ❑ Remember to refer to the Key Words and Phrases in Instructions sheet and your Formulas sheet.
- ❑ When using your scientific calculator or your graphing calculator, write down the numbers and the operations.
- ❑ You will have 40 min to complete these three tasks. Make sure you plan your time carefully. The first two tasks are 15-min tasks and the last one is a 10-min task.

After 15 min

- ❑ Fifteen min have passed.

After 30 min

- ❑ You have 10 min left.

After 40 min

- ❑ Stop working. Close your booklet.

Collect the booklets.

- ❑ Place all of your materials in your envelope.

Collect the envelopes.

*(For classes **not** completing* Booklet 4, *read the following.)*

- ❑ You have now completed the assessment.
- ❑ (*Optional:* I will be reviewing your work on this assessment and will be using some components for your mark for the course.)
- ❑ EQAO will provide an Individual Student Report to you and your parents in the fall.

Part V

Booklet 4 (30 min) [For schools receiving *Booklet 4*]

Ensure graphing calculators are available for students identified on the first day.

Distribute the envelopes.

Note: *The content of* Booklet 4 *may vary from student to student. There are several versions of this booklet being administered. Booklets will contain multiple-choice questions, short answer questions or tasks. Only students receiving a* Booklet 4 *of multiple-choice questions will receive a Student Answer Sheet for this booklet. The last four barcoded digits on a student's* Booklet 4 *materials should match the last four barcoded digits beside that student's name on the Class Tracking Sheet.*

- ❑ Today we will be working on the last component of the assessment.
- ❑ Take out *Booklet 4*. If there is a graphing calculator icon on the cover, you will need to have a graphing calculator to complete the booklet.
- ❑ Refer to the Key Words and Phrases in Instructions sheet and your Formulas sheet to assist you in answering the questions.
- ❑ You have 30 min to complete this booklet. I will tell you when 15 min have passed.

After 15 min

- ❑ You have 15 min left.

After 30 min

- ❑ Stop working. Close your booklet.
- ❑ You have now completed the assessment.
- ❑ (*Optional:* I will be reviewing your work on this assessment and will be using some components for your mark for the course.)
- ❑ EQAO will provide an Individual Student Report to you and your parents in the fall.

Collect the booklets and the Formulas sheets.

The envelopes can now be reused or recycled.

EQAO Policies

Confidentiality and Security of Materials

Materials must be kept secure. Keep assessment materials strictly confidential; do not photocopy or discuss the assessment materials with anyone.

Student Participation, Absences and Lateness

All students enrolled in Grade 9 applied or academic mathematics classes in publicly funded schools must participate.

If students are absent during the assessment, teachers should have these students complete the assessment when they return, if this is possible within the prescribed time limits. Teachers are required to record on the Class Tracking Sheet the parts of the assessment that have not been completed due to student absence or for other reasons.

If a student moves out of the school during the assessment, mark the student absent and return all materials to EQAO.

If a student is late for class, teachers should have the student begin the assessment when he or she arrives. If possible, allow late students the full time allotted for each component of the assessment.

Classroom Assessment of Student Work

Teachers have the option of marking their own students' work on this assessment prior to submitting it to EQAO for centralized marking. This option provides teachers with an opportunity to obtain a sense of their students' proficiency, and the evaluation may be used in calculating students' grades for the course (in compliance with Ministry of Education Report Card policies). EQAO recommends that attention be paid to all the various components (multiple-choice, short answer and tasks), instead of one component only. Since a number of versions of *Booklet 4* will be administered to students in each class, do not include this booklet as a part of the classroom evaluation.

The marking methodology used is up to the teacher and/or school. No marks are to be placed on student booklets and student booklets must not be photocopied. All materials must be returned to EQAO by the return dates provided with the materials.

Students Studying Mathematics in French

Students in French Immersion and Extended French programs will participate in the English-language assessment. English/French and French/English glossaries of mathematical terms will be provided (See Appendix G).

Teacher Absences

Teachers who have participated in Training to Administer should work through the entire assessment with the students. In the case of an unavoidable absence, another teacher, under the supervision of the principal, may administer the assessment.

Quality Assurance

As part of the Quality Assurance procedures established by EQAO, an observer representing EQAO may visit selected classes. The observer will notify the school by phone and will present a letter of identification to the principal.

The Quality Assurance staff are not present to judge teacher performance; they are there to observe the administration of the assessment. Individual boards, schools and teachers are not identified in the Quality Assurance reports. The observer may ask to interview the principal and a teacher or teachers administering the assessment.

EQAO Policy on the Duty to Report Child Abuse

Students sometimes write about personal issues, including physical, emotional or sexual abuse. Under provincial law, professionals dealing with children, including teachers and school principals, have a duty to report suspicions of child abuse to the Children's Aid Society. According to the *Child and Family Services Act*, the duty to report also applies where there are reasonable grounds to suspect patterns of child neglect. These same duties to report, which are also addressed in school boards' child abuse prevention policies, apply to teachers and principals involved in administering the assessment or marking student work. If these or other professionals engaged in work for EQAO have reasonable grounds to suspect child abuse or neglect, they are obliged to report their suspicion and the information on which it is based directly to the Children's Aid Society. EQAO has procedures in place to facilitate reporting by teachers and principals during the marking process.

EQAO Policy on Offensive Language

EQAO values the welfare of students and encourages a positive attitude toward assessments. Student work that contains offensive language or graphic depictions that are obscene or racist will not be marked. The student's principal will be informed and asked to take appropriate action.

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Accommodations for Students with Special Needs

Definition of Terms

Students with special needs

"Students with special needs" are students with Individual Education Plans (IEPs) who may or may not have been identified as "exceptional pupils" through the Identification, Placement and Review Committee (IPRC) process.

Accommodations

"Accommodations" are supports and services that enable students with special needs to demonstrate their competencies in the skills being measured by the assessment.

Accommodations change the way in which the assessment is administered or the way in which the student responds to the various components of the test, without altering the essential purpose and content of the assessment or affecting the meaning and validity of the assessment results.

Accommodations used for this assessment must be in the student's IEP and must not be used just for the purposes of this particular assessment. Except for accommodations that alter the setting or the time allowed for the assessment, accommodations are means of accessing written text and graphics and/or means of responding to them.

Modifications

The term "modifications" refers to supports and services that differ from accommodations in that they actually alter the meaning of the assessment results by changing the level of difficulty of the assessment. Such supports and services include adaptations or alterations of the assessment content and teacher assistance in the form of clarification or explanation of parts of the assessment.

The nature of the assessment and the conditions imposed on its administration by the standards of practice for large-scale assessments are such that certain strategies that are appropriate in a classroom setting are in fact "modifications" and are not allowable for the purposes of this assessment.

Examples of strategies that are appropriate in a classroom instructional or assessment context but are **not allowable** for the Grade 9 Assessment of Mathematics are clarifying questions for students, encouraging students to question for clarification and additional information and encouraging oral discussion prior to the completion of tasks.

In order to ensure that all students have opportunities to familiarize themselves with the assessment and receive clarification and explanation of the types of instructions and questions and of the language and layout of the assessment, EQAO has posted sample Assessment Items and Student Responses on its Web site (www.eqao.com). Included are directions to students about responding to multiple-choice questions, short answer items and tasks. Short answer and task booklets will also contain Key Words and Phrases in Instructions sheets for students to refer to during the assessment.

Guiding Principles

All Grade 9 students in applied or academic mathematics programs will participate in the Grade 9 Assessment of Mathematics.

Students with special needs must be accommodated.

Adherence to the EQAO policy on accommodations will ensure consistency and fairness across the province and from one year to the next.

Accommodations must not change the nature, content or validity of the assessment.

Procedures for Accommodations

Accommodations must be made for students with special needs (see definitions on page 22). Students qualifying for accommodations **may or may not** have been formally identified as exceptional by an IPRC.

Decisions about accommodations must

- always be made on an individual student basis;
- be made by the principal in consultation with appropriate staff (including Special Education resource services staff, where appropriate);
- be made prior to the assessment;
- take into consideration all accommodations included in the student's IEP that are also listed in this document for use on the assessment;
- be clearly communicated to the student and parent/guardian prior to the writing of the assessment and
- be recorded on the Student Information Form provided by EQAO.

Human resources required for the implementation of accommodations

In some cases, personnel may be required to assist with the implementation of accommodations for students with special needs. See Appendix F for direction on the qualifications and roles of individuals assisting with accommodations.

Accommodations Permitted

Note: To ensure the integrity of the assessment and the equitable participation of all students, only the accommodations listed below may be provided for students with special needs. In each case, the accommodation provided must be specified in the student's IEP.

In the case where there is an accommodation included in the student's IEP that conforms to the definition of "accommodations" on page 22 and that is not included in the following list, a written request for the use of this accommodation may be faxed, e-mailed or mailed to the Chief Assessment Officer of EQAO at

fax:	(416) 325-2956
e-mail:	secondary@eqao.com
mail:	2 Carlton Street Suite 1200 Toronto, ON M5B 2M9

This includes requests for extra time beyond double the time allowed for the test.

1. Setting

- Students may be provided with an individual or small-group setting in a separate location or familiar space.
- Individual study carrels may be provided.
- Students may be given preferential seating within the regular classroom.
- Special lighting may be provided.
- Assistive devices or adaptive equipment (such as a device to support the student's arm for printing, writing or keyboarding, special pens or pencil grips) may be provided.

2. Timing

- ❑ Additional time for the assessment beyond the time assigned is permitted, but not more than double the time. Each component must be completed by the end of the assessment day.
- ❑ Periodic supervised breaks may be provided. The duration of the breaks will not be deducted from the time allowed for the component on which the student is working.
- ❑ In cases of students with severe attention problems, prompts may be given solely for the purpose of drawing the student's attention back to the assessment. (See Appendix F for direction on the use of prompters.)

3. Presentation and test format

- ❑ When reading from the Teacher's Scripts, teachers may not change or explain any of the instructions that they read to the students. They may repeat instructions.
- ❑ Teachers must not explain or change the instructions or questions in the student booklets.
- ❑ The assessment may be presented in Braille or large-print versions.
- ❑ The use of American Sign Language, Signed Language or an oral interpreter is permitted for the instructions contained in the Teacher's Scripts.
- ❑ Verbatim reading of the instructions and questions is permitted.
- ❑ An audiotaped version of the test is permitted for visually impaired students.
- ❑ Coloured paper (blue, green or yellow) is permitted and must be requested on the School Verification Report.
- ❑ Assistive devices, such as a Kurzweil reader, devices permitting optical-to-tactile transformations and "universally scripted visual components," or other devices specified in the IEP are permitted. EQAO will provide one single-sided hard copy or one CD with each Kurzweil version of the booklets when requested on the School Verification Report.
- ❑ An electronic format may be used. A single-sided hard copy will be provided for scanning when requested on the School Verification Report by schools with software other than Kurzweil.

It will be necessary for principals to indicate on the School Verification Report the number of Braille, large-print and audiotaped versions of the test required. This will allow EQAO to supply the required versions of the test and to monitor their use across the province.

See Appendix F for direction on verbatim reading.

4. Response format

- ❑ Provisions may be made for students who require extra space for their responses to the assessment questions and tasks. Their responses may be stapled into the student booklets.
- ❑ The use of the following:
  - a Brailler
  - a speech synthesizer or Bliss board
  - voice-to-text software, such as Dragon Naturally Speaking
  - augmentative alternative communication

  is permitted when

  i) the student has a special need that affects written expression and this special need is such that the student cannot translate thoughts into written language even though the student can express thoughts orally, or

ii) the student has a special need that affects written output and the time constraint of the on-demand task will inhibit the required product, or

iii) the student has a special need that affects small motor control and his or her handwriting is illegible and would be unintelligible to the marker, thus preventing an appropriate assessment, and the accommodation is included in the student's IEP, the student may be accommodated with

- verbatim scribing of the responses,
- tape recording for later transcription or
- a computer or word processor.

See Appendix F for direction on verbatim scribing.

Special Provisions for Students Enrolled in English as a Second Language (ESL)/ English Literacy Development (ELD) Programs

Special provisions may be made for students who take part in the Grade 9 Assessment of Mathematics and are enrolled in English as a Second Language (ESL) or English Literacy Development (ELD) programs (ESL, levels 1 to 4; ELD, levels 1 to 4; and Bridge to English — ESL, level 5).

Please note: If there is no ESL/ELD program available to a student but he or she would qualify for one of the above-listed programs if it were offered in the school, the student may be given special provisions.

Decision-Making Steps

The decision about any special provisions must be made on an individual basis:

- ❑ Consider each student's situation prior to the administration of the assessment.
- ❑ Ensure consultation takes place among the principal, teacher and appropriate staff before deciding if the student is a candidate for special provisions.
- ❑ Inform the parents/guardians.
- ❑ Record all special provisions on the Student Information Form.

Special Provisions Permitted

- ❑ Periodic supervised breaks (the duration of the breaks will not be deducted from the time allowed for the component on which the student is working);
- ❑ Additional time for the assessment beyond the time specified, but not more than double the time (each component administered on any day must be completed by the end of that day);
- ❑ Verbatim reading of questions and
- ❑ An individual or small-group setting in a separate location or familiar space, or an individual study carrel.

Special Cases

When a student transfers into the school from another province or country a very short time before the test dates and there is no time to develop an IEP for the student, and there is documentation to show that an accommodation is necessary, the principal of the school may grant special permission for one or more accommodations. The Student Information Form must indicate that the student does not have an IEP and the accommodation given must be noted on the form. Only accommodations listed in this document are permitted. The principal is responsible for maintaining a record of the circumstances necessitating the accommodation and the type of accommodation provided for verification by EQAO.

An IEP should be developed for the student at the first opportunity. In some cases, an exemption should be considered.

Students who would not usually require an accommodation, but have a temporary injury or condition that that would otherwise preclude participation in the assessment, may be granted special permission by the principal for one or more appropriate accommodations. The accommodation(s) must be documented on the Student Information Form. The principal is responsible for maintaining a record of the nature of the circumstance and the type of accommodation provided, for verification by EQAO. If an appropriate accommodation cannot be provided that will allow the student to participate in the assessment, then an exemption should be considered. An example of a circumstance that may require a temporary accommodation is an injury to the hand that requires the student's work to be scribed. In such a circumstance, it is not necessary for the student to have an IEP.

Exemptions

Students with Special Needs

An exemption may be considered if the full range of permitted accommodations has been considered and it is determined that the student still would not be able to provide evidence of learning under these conditions.

Decision-Making Steps

The decision about any exemption must be made on an individual basis:

- ❑ The teacher, principal and appropriate student services personnel consult with one another and with the parent/guardian about the exemption. The parent/guardian and student should be informed that the assessment activities are part of the classroom instruction during the period of the assessment.
- ❑ The principal asks the parent/guardian for signed, informed consent. If consent is obtained, the principal keeps the signed consent form in the school office. (Do not send it to EQAO.) The exemption is noted on the Student Information Form and the booklets are marked "not complete" on the Class Tracking Sheet.
- ❑ If consent is not obtained, the student participates in the assessment and may be considered for accommodations. All accommodations are recorded on the Student Information Form.

Students in ESL/ELD Programs

Students who are taking ESL/ELD courses and have not yet acquired a sufficient level of proficiency in English to complete the assessment, even with special provisions, should be exempted.

Decision-Making Steps

The decision about any exemption must be made on an individual basis:

- ❑ The principal contacts the parent/guardian to obtain signed, informed consent. If consent is obtained, the principal keeps the signed consent form in the school office. (Do not send it to EQAO.) The exemption is recorded on the Student Information Form and the booklets are marked "not complete" on the Class Tracking Sheet.
- ❑ If consent is not obtained, the student participates in the assessment and may be considered for special provisions. Special provisions are recorded on the Student Information Form.

Background Information

The Education Quality and Accountability Office

The Education Quality and Accountability Office (EQAO) is an independent, arm's-length agency established by the Government of Ontario. Its purpose is to promote greater accountability and better quality in Ontario's publicly funded school system.

The role of EQAO is to

- design and implement a comprehensive program of student assessment within government-established guidelines;
- develop and implement a system for measuring the quality of education in Ontario;
- manage Ontario's participation in national and international assessments;
- promote research in best practices in assessment and accountability;
- conduct quality reviews in co-operation with school boards and
- report to the Minister of Education, the public and the education community on system quality issues, and recommend improvements.

Development of the Assessment

EQAO has developed the assessment in collaboration with teams of Ontario teachers, consultants, principals and university professors. These educators have contributed their expertise in mathematics, their knowledge of *The Ontario Curriculum, Grades 9 and 10: Mathematics,* their experience with equity issues, their knowledge concerning students with special needs and their technical knowledge pertaining to validity and reliability.

EQAO's commitment to both accountability and improvement has led to the following criteria for the Grade 9 Assessment of Mathematics. The assessment must

- be of high quality to ensure that reliable information about student achievement is obtained;
- ask students to work independently to complete challenging tasks across the mathematics curriculum;
- give a broad view of students' knowledge and skills in mathematics and
- contribute to student learning.

Barcodes

All EQAO assessment booklets are digitally printed. A benefit of digital printing is that documents such as booklets, Class Tracking Sheets, Student Information Forms and questionnaires can be printed with barcodes, facilitating preparation for and the administration of the assessment. When preparing for the administration, assessment staff must ensure that the last four digits of the barcodes on the Class Tracking Sheet and Student Information Forms match the last four digits of the barcodes on the booklets. Staff must also ensure that students receive booklets with barcodes that match their Student Information Form barcodes and the barcodes on the Class Tracking Sheet.

It is very important that these barcodes not be altered. **Please do not attempt to change barcodes**. The alteration of barcodes may affect the accuracy of the student's Individual Student Report. EQAO is aware that on rare occasions barcodes may be mismatched. If this should occur, please call EQAO at 1-888-327-7377 and indicate that you have a barcode problem. You will be told how to correct the problem.

Components of the Grade 9 Assessment of Mathematics

All of the following components of the assessment must be completed by a student in order for the student to be provided with an Individual Student Report. If all components

are not completed, there may be insufficient data on which to report.

Tasks

Students will complete three tasks per day over 40 min in each of two mathematics classes. Each task is a collection of related questions based on one or two strands. Each task will provide information on the student's performance in one or more strands and in all four categories.

Short Answer Items

Students will solve 10 items over a 30-min period. Each short answer item is related to a single strand and a single category. These questions will require students to think mathematically but will require minimal written response.

Multiple-Choice Questions

Students will solve 24 questions over a 30-min period. Each multiple-choice question is related to a single strand and a single category. These questions provide students with an opportunity to demonstrate their understanding without having to show their work. The questions will assess student work on components of the curriculum that can be easily measured through multiple-choice questions.

Additional Components

In some schools, students will also be asked to complete *Booklet 4*, an additional 30-min component. Multiple versions of this booklet will be distributed in each class. Since these booklets include items that will be used to establish the comparability of assessments and items being piloted or field tested for future assessments or support materials, it is important that students complete the booklet. **This component will not be included in student scores and should not be marked for classroom evaluation.** *Booklet 4* will contain either multiple-choice questions with a corresponding Student Answer Sheet — *Booklet 4*, short answer questions **or** tasks.

Some students in classes completing *Booklet 4* will require a graphing calculator. These booklets are identified by a graphing calculator icon on the cover. (See Teacher's Scripts for more detail.)

Reporting to Students and Parents

In the fall of 2003, EQAO will provide an Individual Student Report for each student who participated in the assessment. The Individual Student Report will indicate levels of achievement for mathematics. Samples of student work will be provided to assist teachers in the interpretation of reports. Directors of education for each district school board and school authority will receive board and school reports. EQAO will report on student achievement in the province and in school boards in the *Provincial Report on Achievement*.

Appendices

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Students with IEPs: Sample Letter to Parent/Guardian

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Students Receiving Special Provisions: Sample Letter to Parent/Guardian

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Appendix H
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Appendix A

Students with Individual Education Plans:
Sample Letter to Parent/Guardian

(on school letterhead)

Dear Parent/Guardian:

Name of Student: _____
(Print Name)

Between _____ and _____, students in Grade 9 applied and academic mathematics courses will be participating in the province-wide Grade 9 Assessment of Mathematics.

The purpose of this letter is to inform you that, in accordance with your child's Individual Education Plan, the following accommodations will be provided:

- ❑ An individual or small-group setting in a separate location or familiar space, an individual study carrel, special lighting or adaptive equipment
- ❑ Additional time for the test beyond the time assigned, but no more than double the time
- ❑ Periodic supervised breaks
- ❑ Prompts for the purpose of drawing the student's attention back to the test
- ❑ Braille version of the test
- ❑ Large-print version of the test
- ❑ Electronic version of the test
- ❑ American Sign Language, Signed Language or an oral interpreter
- ❑ Assistive devices and technology resources, such as a Kurzweil reader, a speech synthesizer, a Bliss board, a Brailler or voice-to-text software
  Specify: _____
- ❑ Augmentative alternative communication
- ❑ Audiotaped version of the test
- ❑ Audiotaping of responses to the test
- ❑ Verbatim scribing of responses
- ❑ Use of computer or word processor for responses
- ❑ Verbatim reading of instructions and questions or tasks
- ❑ Other, please specify: _____

If you have any questions or concerns about the accommodation(s) your son or daughter will receive, please contact me.

_____
(Principal's Signature)

A printable and editable version of this document is available on the CD in the 2_Documents folder.

Appendix B

Students Receiving Special Provisions:
Sample Letter to Parent/Guardian or Adult Student

(on school letterhead)

Dear Parent/Guardian or Adult Student:

Name of Student: _____
(Print Name)

Between _____ and _____, students in Grade 9 applied and academic mathematics courses will be participating in the province-wide Grade 9 Assessment of Mathematics.

The purpose of this letter is to inform you that the following special provisions will be in place for your child or you as permitted by the policy on Special Provisions for Students Enrolled in ESL/ELD Programs issued by the Education Quality and Accountability Office:

- ❑ Periodic supervised breaks
- ❑ Additional time for the test beyond the time assigned, but not more than double the time
- ❑ Verbatim reading of questions
- ❑ An individual or small-group setting in a separate location or familiar space, an individual study carrel, or preferential seating

If you have any questions or concerns about the special provisions, please contact me.

_____
(Principal's Signature)

A printable and editable version of this document is available on the CD in the 2_Documents folder.

Appendix C

Sample Letter to Parent/Guardian Recommending an Exemption

(on school letterhead)

Dear Parent/Guardian:

Between _____ and _____, students in Grade 9 applied and academic mathematics courses will be participating in the province-wide Grade 9 Assessment of Mathematics.

We recommend that your child receive an exemption from the assessment. This would mean that your child … (*Identify the alternative activities that will be offered.*)

We are recommending this exemption for the following reason(s):
(*Please give the reason(s) for which the school is recommending the exemption. Refer to the section on exemptions.*)

If you agree that your child should be exempted, please sign the consent form below and return it to the school by (*date*). Please contact me if you have any questions.

_____
Principal's Signature

Name of Student: _____

I (we) _____

authorize the school to exempt my/our child from the Grade 9 Assessment of Mathematics.

Signature(s) of Parent(s) or Guardian(s)

_____

_____

A printable and editable version of this document is available on the CD in the 2_Documents folder.

Appendix D

Key Words and Phrases in Instructions

Throughout the assessment, key words and phrases are used to identify the type of response required from you. The key words and their explanations are listed below. Refer to these explanations to ensure you are responding to the question that is asked.

Compare:
Tell what is the same and what is different.

Describe:
Tell about something in a step-by-step manner. Use words, numbers, graphs, diagrams, symbols, charts and/or pictures to do this.

Explain:
Use words and symbols to make your solutions clear and understandable.

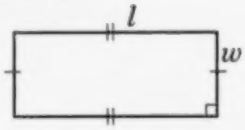
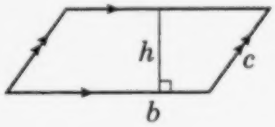
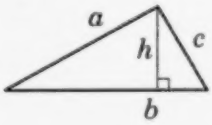
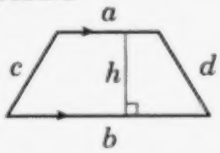
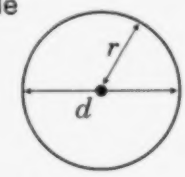
Give reasons for your answer:
Explain your reasoning in your own words. Give reasons and evidence to show your answer is correct or proper.

List:
Write down or identify in point form.

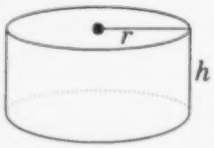
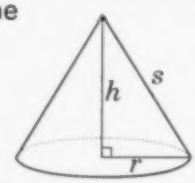
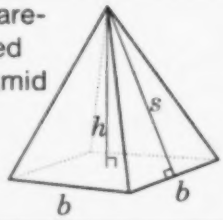
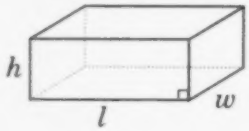
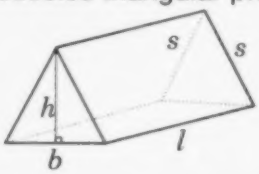
Show your work:
Record all calculations. Include all the steps you went through to get your answer. You may want to use words, numbers, graphs, diagrams, symbols, charts and/or pictures to explain your thinking.

A printable version of this document is available on the CD in the 2_Documents folder.

Appendix E

Geometric Figure	Perimeter	Area/Surface Area
Rectangle 	$P = 2l + 2w$ $P = 2(l + w)$	$A = lw$
Parallelogram 	$P = b + b + c + c$ $P = 2b + 2c$	$A = bh$
Triangle 	$P = a + b + c$	$A = \frac{bh}{2}$ *or* $A = \frac{1}{2}bh$
Trapezoid 	$P = a + b + c + d$	$A = \frac{(a + b)h}{2}$ *or* $A = \frac{1}{2}(a + b)h$
Circle 	$C = \pi d$ *or* $C = 2\pi r$	$A = \pi r^2$

A printable version of this document is available on the CD in the 2_Documents folder.

Geometric Figure	Area/Surface Area	Volume
Cylinder 	$A_{top} = \pi r^2$ $A_{base} = \pi r^2$ $A_{side} = 2\pi rh$ $A_{total} = 2\pi r^2 + 2\pi rh$	$V = \pi r^2 h$
Sphere	$A = 4\pi r^2$	$V = \frac{4}{3}\pi r^3$
Cone 	$A_{cone} = \pi rs$ $A_{base} = \pi r^2$ $A_{total} = A_{cone} + A_{base}$	$V = \frac{1}{3}\pi r^2 h$
Square-based pyramid 	$A_{triangle} = \frac{1}{2}bs$ *(for each triangle)* $A_{base} = b^2$ $A_{total} = A_{4\ triangles} + A_{base}$	$V = \frac{1}{3}b^2 h$
Rectangular prism 	$A_{total} = wh + wh + lw + lw + lh + lh$ $A = 2(wh + lw + lh)$	$V = lwh$
Isosceles triangular prism 	$A_{triangle} = \frac{1}{2}bh$ *(for each triangle)* $A_{rectangles} = ls + lb + ls$ $A_{total} = A_{rectangles} + A_{2\ triangles}$	$V = \frac{1}{2}(bh)l$

Return to page 24

Appendix F

Human Resources Required for the Implementation of Accommodations for Students with Special Needs

Any person who is engaged to assist with the accommodations for one or more students and who is not a teacher must work under the direct supervision of a teacher or the principal. Only adult persons who are not relatives of students writing the test and who are not themselves students in the school may provide assistance in these circumstances. It is important that such individuals be given training and that the guidelines below be followed.

- ❑ The role of individuals who assist with the implementation of accommodations for students with special needs is to ensure that the student is properly supervised during the administration of the test and that the accommodations are appropriately implemented.
- ❑ These individuals shall not provide students with any assistance that would compromise the validity of the test; that is, they shall not provide assistance that helps students to understand the questions or to formulate their answers, or give any instructions or suggestions (for example, suggestions about pacing their work) not given to all students writing the test.
- ❑ It is generally a good idea if the person who assists with the implementation of accommodations is known to the student. However, as noted above, the person must not be a relative.
- ❑ All non-teaching personnel providing assistance with the implementation of accommodations will be required to adhere to the same security provisions and other guidelines for the administration of the Grade 9 Assessment of Mathematics as the teachers and principals involved in its administration.

Scribes:

- ❑ The role of the scribe is to write and draw, where necessary — by hand or using a typewriter or computer — the student's dictated answers to questions and to follow the student's instructions for the drawing of graphs or diagrams. The scribe must not in any way help the student to formulate answers to the questions. In the course of the assessment, the scribe
  - must not give any assistance or suggestions related to the content of the assessment;
  - must not give advice related to the order of the questions or the time to be spent on them;
  - must write, by hand or using a typewriter or computer, the student's answers and must follow instructions for the drawing of graphs or diagrams exactly as they are dictated by the student and
  - may read back what has been recorded at the student's request.

Verbatim Readers:

- ❑ The role of the verbatim reader is to read the instructions and questions exactly as they appear in the student booklets. The reader must not give any assistance or suggestions related to the content of the assessment, the order of the questions or the time to be spent on them. The verbatim reader may repeat the instructions and questions.

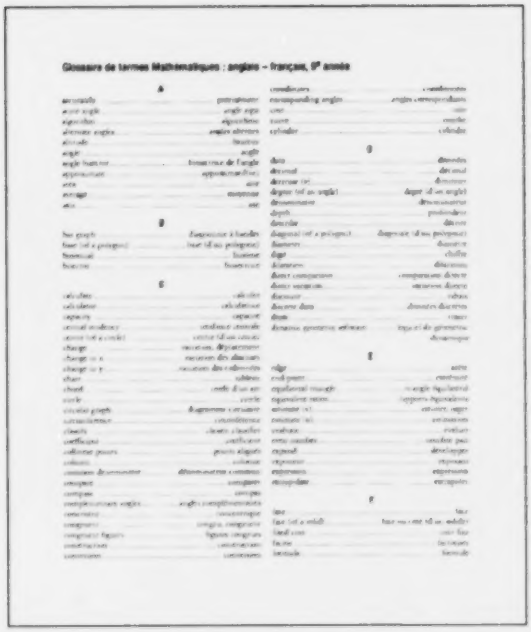
Transcription of audiotaped or Brailled student responses:

- ❑ EQAO will arrange for the transcription of audiotaped or Brailled student responses.

Prompters:

- Prompters are allowed for students with severe attention difficulties. Since the sole purpose of the prompts is to draw the distracted student's attention back to the assessment, prompts are considered process-related aids that do not affect the integrity or validity of the student's performance. The student's attention may be drawn back to the assessment through a pre-arranged signal such as a tap on the student's arm or shoulder or on the desk or through a verbal cue. The prompter may not draw the attention of the student to a specific part of the student booklet. The prompter's role is to observe the student's behaviour, not to observe the quality or pace of the student's work.

Appendix G



Glossaire de termes Mathématiques : anglais – français, 9e année

A printable version of this document is available on the CD in the 2_Documents folder.

Glossaire de termes Mathématiques : français – anglais, 9e année

A

à angle droit	angle-adjacent
à deux dimensions	two-dimensional
à trois dimensions	three-dimensional
abscisse à l'origine	x-intercept
affichage d'écran	screen capture
affine	linear
aire	surface area
algorithme	algorithm
angle	angle
angle aigu	acute angle
angles alternes	alternate angles
angles complémentaires	complementary angles
angles correspondants	corresponding angles
angle droit	right angle
angles internes	internal angles
angle obtus	obtuse angle
angle plat	straight angle
angles supplémentaires	supplementary angles
approximative(ment)	approximate
arête	edge
arguments	arguments
axe	axis
axe des x	x-axis
axe des y	y-axis
axe de symétrie	line of symmetry

B

base (d'un polygone)	base (of a polygon)
bissectrice	bisector
bissectrice	bisector
bissectrice de l'angle	angle bisector

C

calculatrice	calculator
calculatrice à affichage graphique	graphing calculator
calculer	calculate
capacité	capacity
caractéristiques	properties
carré	square
cent milliards	tera
centre (d'un cercle)	center (of a circle)
cercle	circle
chevauchement	overlap
chiffre	digit
chiffres significatifs	significant digits
circonférence	circumference
classer, classifier	classify
coefficient	coefficient
colinéaire	collinear
comparaison directe	direct comparison
comparer	compare
compas	compass
compter	count
concentrique	concentric
construire, dessiner, tracer	draw
congru, congruent	congruent
construction	construction
convexe	convex
coordonnées	coordinates
coude d'un arc	chord
cube	cube
courbe	curve
croître	rise (v)
cube	cube
cube fini	cubed root
cube variable	variable cube
cylindre	cylinder

D

déblaiement	excavation
décimal	decimal
décrire	describe
défini	define
degré (d'un angle)	degree (of an angle)
démonstration	demonstration
démonstration à rebours	converse demonstration
dessin à l'échelle	scale drawing
dessiner	sketch (v)
directrice de symétrie	axis of symmetry
développer	expand
diagonale (d'un polygone)	diagonal (of a polygon)
diagramme à barres	bar graph
diagramme circulaire	circular graph
diagramme à ligne brisée	line graph
diamètre	diameter
dilatation	dilation
dimension	dimension
dimension	dimension
distance	distance (n)
distance	reach
distances	area
données	data
données discrètes	discrete data
donner	give
droites d'connection	connecting lines
droite la moins oblique	line of best fit
droite numérique	number line
droites parallèles	parallel lines
droites perpendiculaires	perpendicular lines

E

écart	range
échantillon	sample
échelle	scale
élément	cell
empiler	stack (v)
ensemble	set
entier relatif	integer
entiers naturels	natural integers
équation	law (n)
estimation	estimate (n)
estimer	estimate (v)
étages	steps
étiquettes, identifier	label
évaluer	evaluate
exposant	exponent
expression	expression
expression	expression
extrapoler	extrapolate
extrémité	end point

F

face	face
face (ou côté) d'un solide	face (of a solid)
facteur	factor
figures congruentes	congruent figures
figures semblables	similar figures
figures semblables	similar figures
forme	shape
formes géométriques	geometric shapes and solids
formule	formula
fractions irréductibles	simple fractions

G

graduelle(ment)	gradually
graphique	graph
grille	grid

H

hauteur (d'un polygone)	height (of a polygon)
hauteur	altitude
hypothèse	hypothesis
hypothèse	hypothesis

I

identifier, étiquetter	label
indéfini	undefined
inégalité	inequality
intérieur, dedans, ...vers l'intérieur	inside
interpoler	interpolate
interrupteurs de deux directions	interrupting lines

J

jugés, estimés	estimate (v)

L

largeur	width
longueur	length
longueur de générateur dimensionnel	dimension generator self-length
longueur	length
lonnage	tonnage

M

mesure	measure
mesurer	measure
médiane	median
médiatrice	perpendicular bisector
minimum	minimum, minimum (n)
millième	thousandth
milliers	thousands
minimiser	minimize
modèle	model
modèle (n)	model (n)
modéliser	model (v)
monétaire	monetary
moyenne	mean, average

N

négatif	negative
nombre arrondi	rounded number
nombre entier	whole number
nombre impair	uneven number
nombre pair	even number
nombres naturels	natural numbers
nombres rationnels	rational numbers
nombres réels	real numbers
non affine	non-linear
notation scientifique	scientific notation
nuage de points	scatter plot
numérateur	numerator

O

observer	observe
octogone	octagon
octroyé à l'origine	y-intercept
ordre des opérations	order of operations
organiser	organize
origine	origin

P

parallélogramme	parallelogram
pente	slope
pesanteur	gravity
perpendiculaire	perpendicular
plan cartésien	xy-plane
placer (ranger dans)	
« figures planes »	plane (n) (« plane shapes »)
plus grand que (>)	greater than (>)
plus petit que (<)	less than (<)
pointe aiguës	sharpened points
point d'intersection	point of intersection
point milieu	midpoint
polygone	polygon
polygone régulier	regular polygon
polynôme	polynomial
pourcent	percent
pourcentage	percentage
produit	product
prouver	prove
pyramide à base carrée	square based pyramid
pyramide à base rectangulaire	rectangular pyramid
profondeur	depth
propriétés	properties
puissance	power
pyramide	pyramid

Q

quadrant, quart de cercle	quadrant
quadrilatère	quadrilateral
quart de cercle, quadrant	quadrant

R

rabais	discount
rayon	ray
rapport	ratio
rapporter	percentage
rapports équivalents	equivalent ratios
ratio	ratio
réciproque	reciprocal
relation	relation, relationship
relation linéaire	linear relation
représenter graphiquement	plot
résolution de problèmes	problem solving
rond	rounded

S

segment de droite	line segment
série	series
simplifier	simplify
simulation	simulation
sinusoïdal	sinusoidal
sondage	survey
sous la forme la plus simple	simplest form
sphère	sphere
substituer	substitute
suite	sequence

T

tableau	chart
tableau de valeurs	table of values
tableau des effectifs	tally chart
tableur	spreadsheet
taux	rate
taux de vacances	rate of change
taux de vente	sales tax
tendance centrale	central tendency
terme	term
termes semblables	like terms
théorème de Pythagore	Pythagorean theorem
tracer	draw
trapèze	trapezoid
triangle équilatéral	equilateral triangle
triangle isocèle	isosceles triangle
triangle scalène	scalene triangle
tri	sort
trombone	paperclip

U

unités	units
unités carrées	square units

V

valeur optimale	optimal value
variable	variable
variation	variation
variation des abscisses	change in x
variation des ordonnées	change in y
variation directe	direct variation
volume	volume

A printable version of this document is available on the CD in the 2_Documents folder.

Appendix H

Grade 9 Assessment of Mathematics
Winter 2003
Packing/Return List
Shipment 1

School: School Name — School Number: XXXXXX
Board: Board Name — Board Number: XXX (XXXXX)

Description	Distribution	Quantity sent to school	Quantity received by school	Quantity returned to EQAO	Quantity received by EQAO
PRINCIPAL MATERIALS					
Packing/Return List	1/school				
Envelope for school which includes:					
Memo to Principal	1/school				
Steps and Teacher Scripts	1/principal + 1/teacher				
Training to Administer CD	1/school				
Marker: AD	1/school				
ADMINISTRATIVE MATERIALS					
Student Information Form	1/student				
Student Information Form — Special Version of the Assessment*	1/student				
Class Tracking Sheet	1/class				
Class Tracking Sheet — Special Version of the Assessment*	1/class				

***Note:** Applicable only if special version of Assessment was requested on the School Verification Report.

Receipt of Materials:
Verify that numbers of materials provided match the quantities identified on this Packing/Return List. If quantities do not match, contact EQAO at 1-888-327-7377 for missing materials.

Return of Materials:
All materials are secure documents and, whether used or not, must be returned to EQAO. Indicate the number of items being returned on this Packing/Return List. Keep a copy of the completed list and return the original with all test materials to EQAO using the Prepaid Return Courier Slip and following the return instructions provided. (Materials in shaded boxes need not be returned.)

Grade 9 Assessment of Mathematics
Winter 2003
Packing/Return List
Shipment 2

School: School Name — School Number: XXXXXX
Board: Board Name — Board Number: XXX (XXXXX)

Description	Distribution	Quantity sent to school	Quantity received by school	Quantity returned to EQAO	Quantity received by EQAO
PRINCIPAL MATERIALS					
Packing/Return List	1/school				
Envelope for school, which includes:					
Memo to Principal	1/school				
Return Address Labels	1/folio				
Prepaid Return Courier Slip	1/school				
Plastic ties	4/folio				
ADMINISTRATIVE MATERIALS					
Teacher Questionnaire	1/class				
STUDENT MATERIALS					
Academic Student Packages**	1/student				
Assessment Booklets					
Student Questionnaire					
Formula Sheet					
Plain 9" x 12" envelope					
Glossary of Mathematical Terms (French Immersion Only)					
Student Answer Sheet(s)*					
Applied Student Packages**	1/student				
Assessment Booklets					
Student Questionnaire					
Formula Sheet					
Plain 9" x 12" envelope					
Glossary of Mathematical Terms (French Immersion Only)					
Student Answer Sheet(s)*					

***Note:** *Booklet 4* will have an answer sheet only if it is a multiple choice booklet.
****Note:** Not all schools will receive *Booklet 4*.

Receipt of Materials:
Verify that numbers of materials provided match the quantities identified on this Packing/Return List. If quantities do not match, contact EQAO at 1-888-327-7377 to request missing materials.

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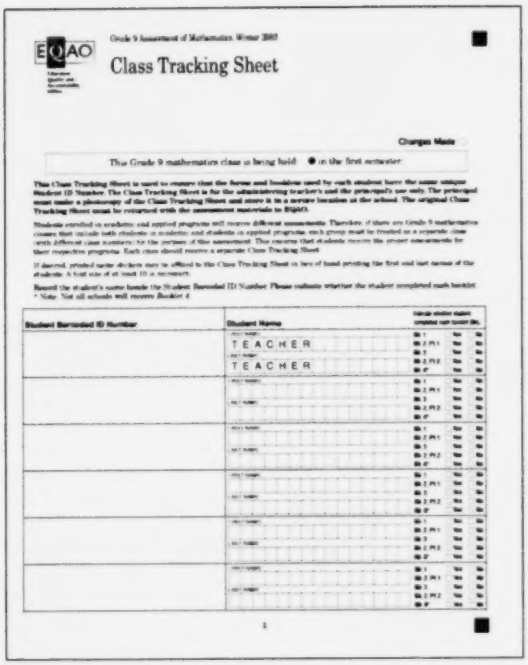
Appendix I



Grade 9 Assessment of Mathematics, Winter 2003

Class Tracking Sheet

Changes Made

This Grade 9 mathematics class is being held: ● in the first semester

This Class Tracking Sheet is used to ensure that the forms and booklets used by each student have the same unique Student ID Number. The Class Tracking Sheet is for the administering teacher's and the principal's use only. The principal must make a photocopy of the Class Tracking Sheet and store it in a secure location at the school. The original Class Tracking Sheet must be returned with the assessment materials to EQAO.

Students enrolled in academic and applied programs will receive different assessments. Therefore, if there are Grade 9 mathematics classes that include both students in academic and students in applied programs, each group must be treated as a separate class with different class numbers for the purposes of this assessment. This ensures that students receive the proper assessments for their respective programs. Each class should receive a separate Class Tracking Sheet.

If desired, printed name stickers may be affixed to the Class Tracking Sheet in lieu of hand printing the first and last names of the students. A font size of at least 10 is necessary.

Record the student's name beside the Student Barcoded ID Number. Please indicate whether the student completed math booklet.
* Note: Not all schools will receive Booklet 4.

Student Barcoded ID Number	Student Name	Indicate whether student completed math booklet (Bk.)
	(FULL NAME) TEACHER (ALT. NAME) TEACHER	Bk. 1 ☐ Yes ☐ No Bk. 2 PR1 ☐ Yes ☐ No Bk. 3 ☐ Yes ☐ No Bk. 2 PR2 ☐ Yes ☐ No Bk. 4* ☐ Yes ☐ No
	(FULL NAME) (ALT. NAME)	Bk. 1 ☐ Yes ☐ No Bk. 2 PR1 ☐ Yes ☐ No Bk. 3 ☐ Yes ☐ No Bk. 2 PR2 ☐ Yes ☐ No Bk. 4* ☐ Yes ☐ No
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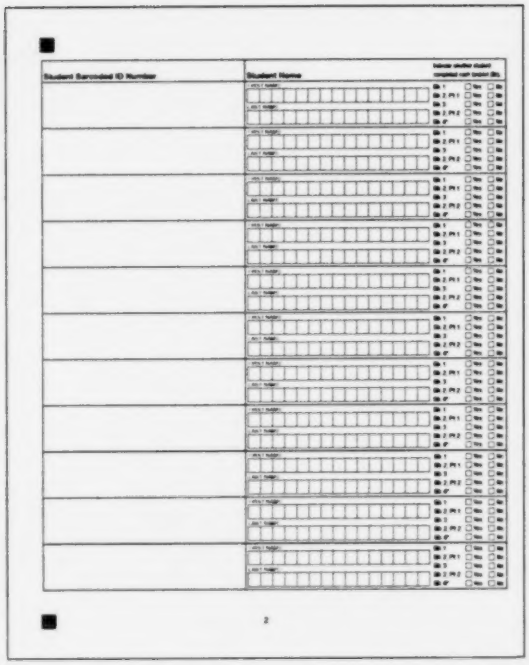
1



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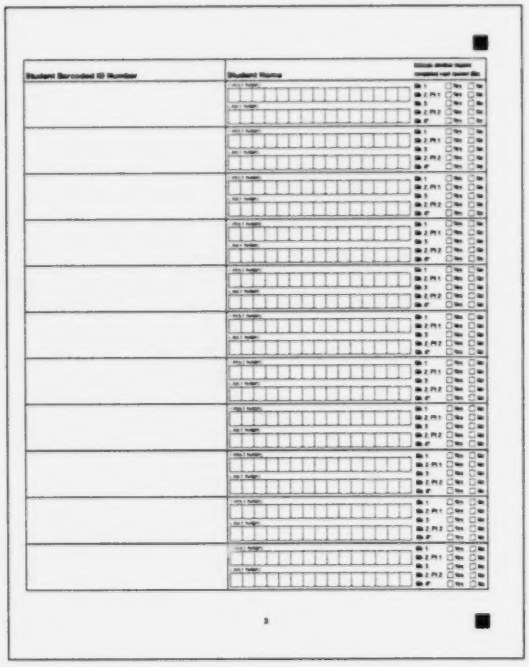
2



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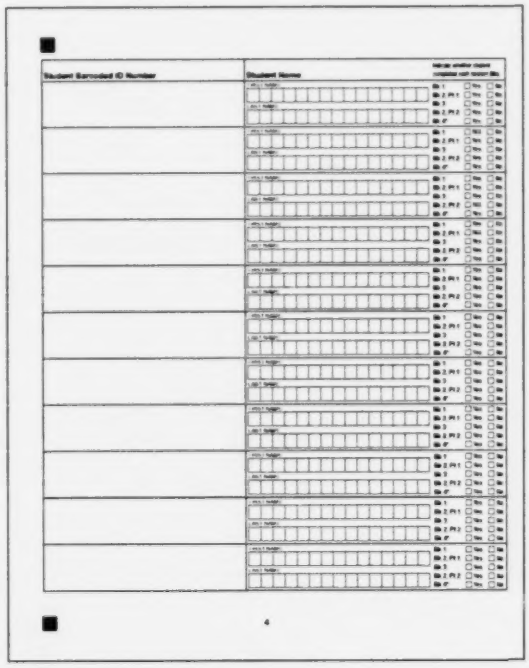
3



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4

Appendix J

EQAO Student Information Form

VOID

The information provided in this form is used for the Individual Student Report. Carefully fill out one form for ***EVERY*** *student in Grade 9 applied or academic mathematics identified on the Class Tracking Sheet. No form is to be filled out for students in locally developed (essential) mathematics programs. Return the originals to EQAO. Thank you.*

Please fill in the circle that best describes your response. Correct ● Incorrect ✓ ✗

If you wish to change one of your answers, **put an X through the incorrect answer and fill in the circle for the correct answer**, as shown below.

In this example, Yes would be considered your final answer. ● Yes ✗ No

Part A — Student Background

1. **Gender**

   Male Female

2. **a) This student is home-schooled. (Results for this student will not be included in your school's results.)**

   Yes

   b) This student is currently attending a special program in a Section 19 facility.

   Yes No

3. **a) This student is currently enrolled in an English as a Second Language (ESL) program.**

   Yes No

   b) This student is currently enrolled in an English Literacy Development (ELD) program.

   Yes No

   c) There is no ESL or ELD program available for this student, but he or she would qualify for one of these programs if they were available in our school.

   Yes No

4. **This student has an Individual Education Plan (IEP).**

   Yes No

5. **This student has been identified through an Identification, Placement and Review Committee.**

   Yes No

   If Yes, indicate exceptionality. ***(Fill in one circle only.)***

   - Behavioural
   - Autism
   - Deaf or hard of hearing
   - Language impairment
   - Speech impairment
   - Learning disability
   - Gifted
   - Mild intellectual disability
   - Developmental disability
   - Physical disability
   - Blind or low vision
   - Multiple exceptionalities

If the student has not been given an exemption and is to write the assessment with no special provisions or accommodations, the Student Information Form is now complete.

Part B — Test Administration

Exemption

6. **Indicate the student's exemption status.** ***(Fill in one circle only.)***

   - This student has not been given an exemption.
   - This student has been given an exemption because he or she has language needs (e.g., student has limited facility in the English language).
   - This student has been given an exemption because he or she has special needs.
   - This student has been given an exemption for other reasons. _____

   (Use BLOCK or CAPITAL LETTERS.)

If the student has been given an exemption, the Student Information Form is now complete.

Special Provisions

(for students in ESL/ELD programs only)

7. **Indicate which of the following special provisions will be put in place.**

   Additional time for the assessment, but not more than double the time. Indicate the booklet(s) for which additional time will be provided.

   - Part 1 — *Booklet 1* (maximum 30 additional minutes)
   - Part 2 — *Booklet 2*, Tasks 1–3 (maximum 40 additional minutes)
   - Part 3 — *Booklet 3* (maximum 30 additional minutes)
   - Part 4 — *Booklet 2*, Tasks 4–6 (maximum 40 additional minutes)
   - Part 5 — *Booklet 4* (maximum 30 additional minutes)

   Periodic supervised breaks
   An individual or small-group setting or an individual study carrel
   Verbatim reading of instructions and/or questions

If no additional accommodations are required, the Student Information Form is now complete.

Accommodations

(Accommodations used on this assessment must be in the student's IEP.)

8. **Indicate which of the following accommodations will be provided.**

   Additional time for the assessment, but not more than double the time. Indicate the booklet(s) for which additional time will be provided.

   - Part 1 — *Booklet 1* (maximum 30 additional minutes)
   - Part 2 — *Booklet 2*, Tasks 1–3 (maximum 40 additional minutes)
   - Part 3 — *Booklet 3* (maximum 30 additional minutes)
   - Part 4 — *Booklet 2*, Tasks 4–6 (maximum 40 additional minutes)
   - Part 5 — *Booklet 4* (maximum 30 additional minutes)

   Periodic supervised breaks
   An individual or small-group setting or an individual study carrel
   Verbatim reading of instructions and/or questions
   Prompts for the purpose of drawing the student's attention back to the assessment
   Setting with special lighting
   Use of assistive devices or adaptive equipment for seating
   Braille version of the assessment
   Large-print version of the assessment
   Use of American Sign Language, Signed Language or an oral interpreter
   Audiotaped version of the assessment
   Use of coloured overlays or coloured paper
   Use of assistive devices for presentation format
   Electronic version of the assessment
   Use of a Brailler
   Use of a speech synthesizer or Blissboard
   Use of voice-to-text software
   Verbatim scribing of responses
   Audiotaping for later transcription
   Use of computer or word processor for responses
   Augmentative alternative communication

9. **Special cases**

   This student has been granted special permission by the principal for one or more appropriate accommodations due to a recent transfer from another province or country, a temporary injury or a condition that would otherwise preclude the student's participation in the assessment.

   Yes If Yes, please indicate reason: _____

   (Use BLOCK or CAPITAL LETTERS.)

Thank you for completing this form.

Appendix K

EQAO Student Questionnaire

We would like to know a little about your background so that we can see how students with different experiences do on this mathematics assessment. Do not sign or print your name on this questionnaire. Your responses will remain completely confidential. We will only report results for categories of students: for example, female and male. Please read each question carefully. You may ask for help from your teacher to complete this questionnaire. This questionnaire will take 10–15 minutes to complete. If no answer seems exactly right, fill in the box for the one that is closest to what you want to say. Thank you.

Please fill in the box that best describes your response. Correct ● Incorrect ✓ ✗

If you wish to change one of your answers, **put an X through the incorrect answer and fill in the box for the correct answer,** as shown below.

In this example, Yes would be considered your final answer. ● Yes ☒ No

Student Background

1. Are you male or female?

- Male
- Female

2. a) Were you born outside of Canada?

- Yes
- No

b) IF YES, for how many years have you been living in Canada?

- Less than 1 year
- 1–2 years
- 3–5 years
- More than 5 years

3. In what year were you born?

- 1986 or before
- 1987
- 1988
- 1989
- 1990
- 1991
- 1992 or after

4. What language do you speak at home? ***(Fill in one box only.)***

- Only English
- Mostly English
- English as often as another language (or languages)
- Mostly another language (or other languages)
- Only another language (or other languages)

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School Background

5. Over the past year, have you missed more than two weeks of school due to illness, family vacations, student exchanges or other reasons beyond your control?

- Yes
- No

6. How often in the past month have you been absent from mathematic class?

- Never
- 1–2 times
- 3–4 times
- 5 or more times

7. How many elementary schools did you attend before coming to secondary school?

- 1 school
- 2 schools
- 3 schools
- 4 schools
- 5 schools or more

School Work

8. a) Do you have a computer at home that you use for schoolwork?

- Yes
- No

b) IF YES, how often do you use your computer for mathematic homework?
(Fill in one box only.)

- Almost every day
- Once or twice a week
- Once or twice a month
- Never or hardly ever

9. a) Do you have a scientific calculator at home that you use for schoolwork?

- Yes
- No

b) Do you have a graphing calculator at home that you use for schoolwork?

- Yes
- No

10. How much time do you usually spend on mathematic homework (not out of school) on a given day?

- I usually don't have any mathematics homework.
- I have mathematics homework, but I usually spend no time on it.
- I usually spend 30 minutes or less on mathematics homework.
- I usually spend between 31 and 45 minutes on mathematics homework.
- I usually spend more than 45 minutes on mathematics homework.

2 Student Questionnaire

Mathematics

11. Indicate the degree to which you agree or disagree with each of the following statements.

	Strongly Agree 1	2	3	4	Strongly Disagree 5
a) I like mathematics.					
b) I am good at mathematics.					
c) I understand most of the mathematics I am taught.					
d) The mathematics I learn now is very useful for everyday life.					
e) I need to keep taking mathematics for the kind of job I want after I leave school.					
f) Mathematics is boring.					
g) Mathematics is an easy subject.					
h) I enjoy doing mathematics puzzles or exercises just for fun.					

12. How easy or hard do you find doing mathematic questions of the following types.

	Very easy 1	2	3	4	Very hard 5
a) Mathematics questions that deal with number sense (e.g., percent, operations with integers)					
b) Mathematics questions that deal with algebra (e.g., solving equations, simplifying expressions)					
c) Mathematics questions that deal with relationships (e.g., scatter plots, lines of best fit)					
d) Mathematics questions that deal with analytic geometry (e.g., slope, y-intercept)					
e) Mathematics questions that deal with measurement (e.g., volume, perimeter, surface area)					
f) Mathematics questions that deal with geometry (e.g., angles, medians, quadrilaterals)					

Thank you for completing this questionnaire. Please return it to your teacher.

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Appendix L

EQAO

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Student Answer Sheet — *Booklet 1*

Please ensure that all your answers to the multiple-choice questions in *Booklet 1* are entered on this Student Answer Sheet. To ensure your multiple-choice answers are included in the calculation of your final results, they **must** be entered on this sheet.

To indicate the correct answer, **fill in the circle completely**, as shown below.

USE BLACK OR BLUE PEN Correct ● Incorrect ⊗ ✓ ◒ ◉

If you fill in more than one answer to a question, the question will be scored incorrect.

If you wish to change one of your answers, **put an X through the incorrect answer and fill in the circle for the correct answer**, as shown below.

In this example, C would be considered your final answer. ⓐ ⓑ ● ⓓ

1.	ⓐ	ⓑ	ⓒ	ⓓ	13.	ⓐ	ⓑ	ⓒ	ⓓ
2.	ⓐ	ⓑ	ⓒ	ⓓ	14.	ⓐ	ⓑ	ⓒ	ⓓ
3.	ⓐ	ⓑ	ⓒ	ⓓ	15.	ⓐ	ⓑ	ⓒ	ⓓ
4.	ⓐ	ⓑ	ⓒ	ⓓ	16.	ⓐ	ⓑ	ⓒ	ⓓ
5.	ⓐ	ⓑ	ⓒ	ⓓ	17.	ⓐ	ⓑ	ⓒ	ⓓ
6.	ⓐ	ⓑ	ⓒ	ⓓ	18.	ⓐ	ⓑ	ⓒ	ⓓ
7.	ⓐ	ⓑ	ⓒ	ⓓ	19.	ⓐ	ⓑ	ⓒ	ⓓ
8.	ⓐ	ⓑ	ⓒ	ⓓ	20.	ⓐ	ⓑ	ⓒ	ⓓ
9.	ⓐ	ⓑ	ⓒ	ⓓ	21.	ⓐ	ⓑ	ⓒ	ⓓ
10.	ⓐ	ⓑ	ⓒ	ⓓ	22.	ⓐ	ⓑ	ⓒ	ⓓ
11.	ⓐ	ⓑ	ⓒ	ⓓ	23.	ⓐ	ⓑ	ⓒ	ⓓ
12.	ⓐ	ⓑ	ⓒ	ⓓ	24.	ⓐ	ⓑ	ⓒ	ⓓ

EQAO

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Student Answer Sheet — *Booklet 4*

Please ensure that all your answers to the multiple-choice questions in *Booklet 4* are entered on this Student Answer Sheet. To ensure your multiple-choice answers are included in the calculation of your final results, they **must** be entered on this sheet.

To indicate the correct answer, **fill in the circle completely**, as shown below.

USE BLACK OR BLUE PEN Correct ● Incorrect ⊗ ✓ ◒ ◉

If you fill in more than one answer to a question, the question will be scored incorrect.

If you wish to change one of your answers, **put an X through the incorrect answer and fill in the circle for the correct answer**, as shown below.

In this example, C would be considered your final answer. ⓐ ⓑ ● ⓓ

1.	ⓐ	ⓑ	ⓒ	ⓓ	13.	ⓐ	ⓑ	ⓒ	ⓓ
2.	ⓐ	ⓑ	ⓒ	ⓓ	14.	ⓐ	ⓑ	ⓒ	ⓓ
3.	ⓐ	ⓑ	ⓒ	ⓓ	15.	ⓐ	ⓑ	ⓒ	ⓓ
4.	ⓐ	ⓑ	ⓒ	ⓓ	16.	ⓐ	ⓑ	ⓒ	ⓓ
5.	ⓐ	ⓑ	ⓒ	ⓓ	17.	ⓐ	ⓑ	ⓒ	ⓓ
6.	ⓐ	ⓑ	ⓒ	ⓓ	18.	ⓐ	ⓑ	ⓒ	ⓓ
7.	ⓐ	ⓑ	ⓒ	ⓓ	19.	ⓐ	ⓑ	ⓒ	ⓓ
8.	ⓐ	ⓑ	ⓒ	ⓓ	20.	ⓐ	ⓑ	ⓒ	ⓓ
9.	ⓐ	ⓑ	ⓒ	ⓓ	21.	ⓐ	ⓑ	ⓒ	ⓓ
10.	ⓐ	ⓑ	ⓒ	ⓓ	22.	ⓐ	ⓑ	ⓒ	ⓓ
11.	ⓐ	ⓑ	ⓒ	ⓓ	23.	ⓐ	ⓑ	ⓒ	ⓓ
12.	ⓐ	ⓑ	ⓒ	ⓓ	24.	ⓐ	ⓑ	ⓒ	ⓓ

Only students writing *Booklet 4* with multiple-choice will receive a Student Answer Sheet — *Booklet 4*.

Appendix M

EQAO Education Quality and Accountability Office

Teacher Questionnaire

Each of EQAO's assessments is accompanied by questionnaires that supply valuable information to help contextualize student achievement results. The data provided by these questionnaires are used to help direct and make important decisions about program improvement, teacher professional development and the allocation of resources at the provincial, board and school levels.

This Teacher Questionnaire has been designed to provide critical information concerning your classroom demographics, your teaching and assessment practices, the resources available to you for mathematics instruction, as well as your teaching background and ongoing professional development. Therefore, it is important that your responses be as accurate and complete as possible. The information you provide will remain confidential. It will be sent to EQAO and will be seen only by EQAO-authorized staff. You will not be identified through this process.

Please complete and return this questionnaire with the assessment materials from your school.

Please fill in the circle completely. **Correct** ● **Incorrect** ✓ ✗

Mathematics Classes

1. a) Which of the following Grade 9 mathematics courses do you currently teach? ***(Fill in all circles that apply.)***

- ○ Applied course(s)
- ○ Academic course(s)
- ○ Locally developed compulsory course(s)
- ○ A combined mathematics course: some students are taking an academic program and some are taking an applied program in the same classroom
- ○ A combined mathematics course: some students are taking an applied program and some are taking a locally developed program in the same classroom

b) If you indicated in question 1a) that you teach both an applied course and an academic course or a combined academic and applied class, then complete the questionnaire with regard to the program (applied or academic) that includes the majority of students you teach. Indicate the program here:

I am completing the questionnaire with regard to methodologies in

○ Applied classes ○ Academic classes ***(Fill in one circle only.)***

Teacher Collaboration

2. This past semester/year, how often did you meet formally with other secondary school mathematics teachers to plan or discuss curriculum and/or assessment?

- ○ Once a week
- ○ Once every two weeks
- ○ Once a month
- ○ A few times during the course
- ○ Never or hardly ever

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Note: The Teacher Questionnaire is an eight-page document.